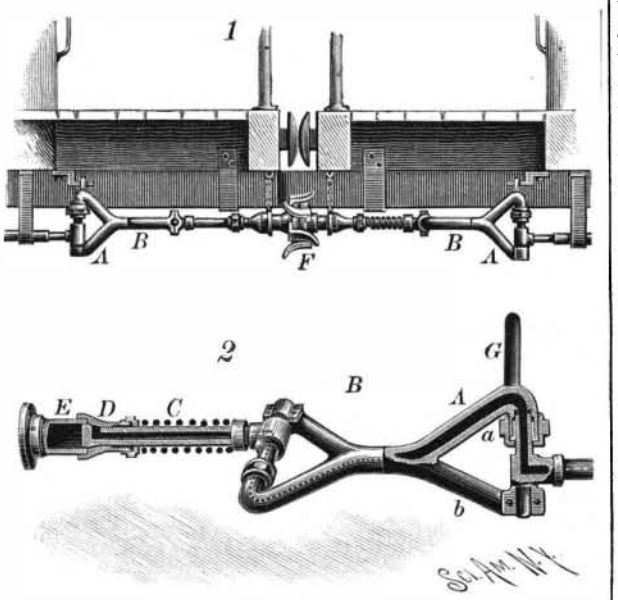
AN IMPROVED STEAM COUPLING FOR CARS.

A coupling for automatically establishing or breaking tubular connection between the cars, or engine and cars, of a train, for conveying steam, air, or water, etc., for warming, ventilating, or analogous purposes, is illustrated herewith, and has been patented by Mr. James I. Collins, of No. 53 Willow Street, Amsterdam, N. Y. Two Y-shaped conductors, A, B, are employed, one member of which, *a*, is tubular, the other, *b*, being made solid to serve as a bearing for connections. The tubular member is carried inward to align with the outer end of the solid member, and is received in one end of an L, held to turn freely in a packing gland, making a hinged steam tight connection. The shanks of the Y conductors are connected by a nipple in such manner that one will occupy a horizontal and the other a vertical position under the car platform, as shown in Fig. 1, both sections being made alike. Into the outer end of the L is screwed a tubular rod, C, surrounded by a spiral spring, the unattached end of the rod being closed, but having a conical enlargement, with a side aperture, and being received and packed to slide in a sleeve, D, to act as a valve. A section of tubing, E, is screwed into this sleeve, having on its outer end a disk with small central aperture, there being on the outer face of the disk a rubber or other flexible packing ring, to make a close joint when brought in close contact with the similar disk of another coupling. The periphery of this disk is furnished with projecting tooth-shaped guides, F, so that when the disks of opposing couplings are brought together, they will be automatically guided to their proper relative position to insure firm contact. The coupling is supported at its outer end by a chain attached to the sill of the car, its inner end being sustained by a staple, G, from a bracket beneath the car. When the disks of these couplings, fitted on opposing cars, are brought in contact, they

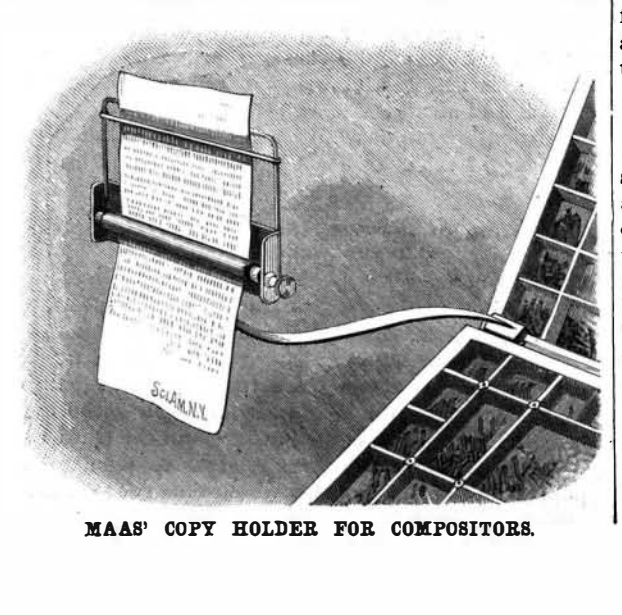


COLLINS' STEAM COUPLING FOR RAILROAD CARS.

are each forced backward, causing the sleeve to slide back upon the rod, C, whereby communication will be opened for the passage of steam, hot air, etc., from one car to another, the uncoupling and separating of the cars causing the automatic closing of such communication, as the spiral spring then forces the valve sleeve and disk outward.

AN IMPROVED COPY HOLDER.

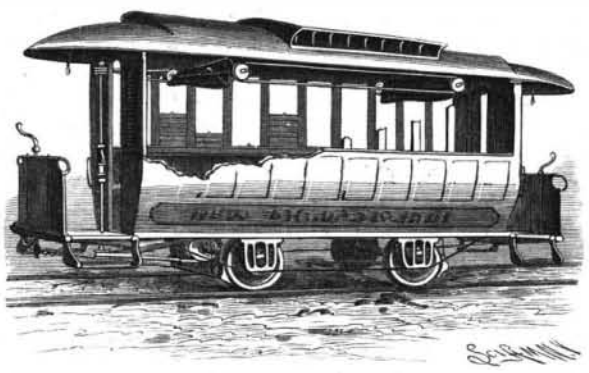
A device which can be readily attached to and detached from either the upper or lower type case, to hold copy in position to be easily read by the compositor in setting up type, is illustrated herewith, and has been patented by Mr. Hugo F. Maas, of Egg Harbor City, N. J. It has a double U-shaped clamp, of wire or sheet metal, with a medial spring plate so dividing the clamp that it may be attached either to the partitions between boxes or to the outer thick frame of the case. A bent arm projects upwardly in double curved form from the clamp, such arm having a flat socket at its upper end to receive tightly a flat tongue, fixed to the lower edge of a copy-supporting rack, made with a lower back plate and skeleton frame, across the upper part of which extends a longitudinal wire. The ends of the back plate have lugs in which is journaled a longitudinal rubber-covered roller, so close to the back plate that copy passed under it may be moved up or down by turning the roller, which has on one end a milled disk for such purpose.



MAAS' COPY HOLDER FOR COMPOSITORS.

AN IMPROVED FAN FOR CARS.

A fan attachment for cars or other vehicles, adapted to be operated by the movement of the car, and



LE BEAU'S FAN FOR CARS.

capable of being readily made inoperative at will, is illustrated herewith, and has been patented by Mr. J. M. Victor Le Beau, of 51 North Peters Street, New Orleans, La. On one of the wheel axles is a pulley, which, by a belt, drives a pulley on a vertical shaft having suitable bearings on one end of the car, adapted to be clutched with and unclutched from another shaft in line therewith and extending to the top of the car. Upon the upper end of the latter shaft is a pulley, a belt from which operates a horizontal shaft mounted transversely in the upper part of the car, carrying a fan. One or more similar fan shafts with fans may also be operated by belts or cords from the first fan shaft. The preferred connecting means between the ends of the vertical shafts communicating power from the car axle is by having their adjacent ends squared, and sliding thereon a square apertured sleeve. This sleeve has an eye at its upper end adapted to engage a spring hook on the upper shaft, to hold the sleeve away from engagement with the squared portion of the lower shaft, when the fans will not be operated, but on releasing the hook the sleeve will slide down far enough to embrace the end portion of the other shaft, when the fans will be set in motion.

Unlooked-for Results.

How slight a circumstance may determine a man's destiny! It was Darwin's voyage in the ship Beagle that, without doubt, laid the foundations of his marvelous success as a naturalist, and ultimately gave to the world "The Origin of Species." Had he not had the wonderful opportunities, suggests the *Western Druggist*, which this trip around the world afforded him for the observation and study of natural phenomena, he would probably have been known to the world only as a somewhat heterodox clergyman of the Church of England, who had little love of theology but a kind and generous heart and a passion for the study of beetles and plants. His father's opposition at first led him to decline the proposed voyage, and when afterward he was led to reconsider the matter and make a visit to Capt. Fitz-Roy, the commander of the Beagle, that disciple of Lavater came very near rejecting him, as was afterward confessed, on account of the shape of his nose! The commander had grave doubts whether any one with a nose like Darwin's could possess sufficient energy for such a voyage.

According to Sir John Lubbock, the great physiologist and physicist Helmholtz dates his start in science to an attack of typhoid fever. This illness led him to the acquisition of a microscope, which he was enabled to purchase, owing to his having spent the autumn vacation of 1841 in the hospital, prostrated with typhoid fever; being a pupil, he was nursed without expense, and on his recovery he found himself in possession of the savings of his slender resources.

New British Cruisers.

The British government have now in course of construction five fast cruisers. These vessels are to be of a new type, their leading feature being a combination of high speed, quick-firing guns, protective deck, and moderately heavy armor. Three of the vessels of this new class are being built in royal dockyards at Chatham and Portsmouth, and two of them are being built by the Fairfield Shipbuilding Company, Glasgow. The first of the fleet to be launched was the Magicienne, which left the ways at Fairfield on the 12th of May. The vessels are of a displacement of 3,000 tons, and their engines are of 9,000 horse power. The speed expected to be obtained is 20 knots. The engines are being made by Messrs. Hawthorne, Leslie & Co., Newcastle-on-Tyne.

The hull is 265 feet long, 42 feet broad, and the moulded depth is 23 feet. It is divided into seventy-five watertight compartments, the engine and boiler space consisting of four of these. The steel protective deck is 1 inch thick in the center and is 2 inches thick in the angles. There are two complete decks running fore and aft. The vital parts are all below the water line. The stem consists of a casting of phosphor bronze, the stern post being made of the same material. The armament will consist of nine 6 pounder Hotchkiss guns, a number of Nordenfelt guns, and six 6 inch 5 ton Armstrong guns. The engines will consist of a pair of horizontal surface-condensing engines, the dimensions of the cylinders being respectively 34½ inches, 51 inches, and 76½ inches diameter; stroke, 36 inches. There are four double-ended cylindrical boilers to work at a pressure of 155 pounds, with a grate surface of 456 square feet. There are twenty-four corrugated furnaces.

AN IMPLEMENT FOR TRANSPLANTING PLANTS.

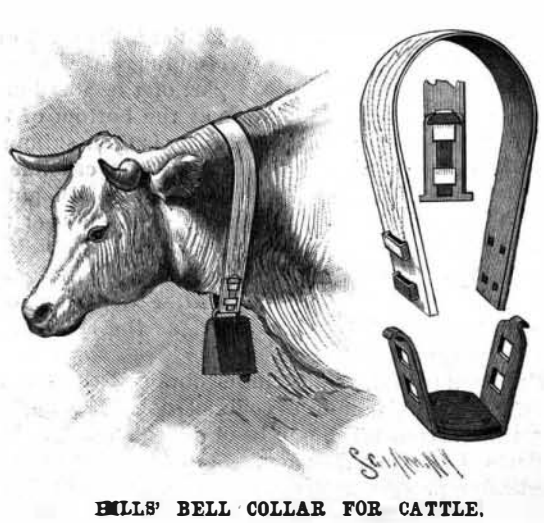
A simple and easily manipulated implement, by the use of which plants may be removed from the ground without disturbing their roots, and by which also holes may be made for the reception of plants, is illustrated herewith, and has been patented by Mr. Thomas R. Coon, of Hood River, Oregon. It is made with an annular band form of earth-cutting blade, combined with the jaws of a tongs. The tongs are so arranged that their handles when closed will close the inner jaws, to which the ends of the band-shaped blade, of spring steel, are attached, the bottom of the blade being beveled or sharpened, and its upper edge embracing a smaller circle than its lower edge, making the central opening slightly cone-shaped, as it is enlarged or contracted when the jaws are opened or closed. The manner of using such an implement in different kinds of soils will vary somewhat, according

COON'S TRANSPLANTING IMPLEMENT.

to the facility with which more or less soil may be removed with the roots of the plant.

AN IMPROVED BELL COLLAR FOR CATTLE.

A simple and efficient bell collar for carrying cattle bells, which may be worn by the animal with more comfort than the leather straps ordinarily used, is illustrated herewith, and has been patented by Messrs. John R. and Elijah R. Hill, of New Albany, Miss. The yoke is made of bent wood, having projecting staples near its extremities, and to its lower end is fitted a metal plate clasp having rectangular perforations for receiving the staples, the ends of the arms of the clasp being bent outward to form fasteners for a T-shaped leather tongue, which is slipped to place within the staples underneath the curved extremities of the arms of the clasp. The bottom part of the clasp, between its arms, has a leather covering for receiving the wear of the staple of the bell.



HILLS' BELL COLLAR FOR CATTLE.